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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,982	01/27/2000	Stephen Shaughnessy	MDSP-P02-180	9313

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ROPES & GRAY LLP
ONE INTERNATIONAL PLACE
BOSTON, MA 02110-2624

EXAMINER	
MERTZ, PREMA MARIA	
ART UNIT	PAPER NUMBER
1646	

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/491,982	SHAUGHNESSY ET AL.	
	Examiner	Art Unit	
	Prema M Mertz	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/11/2004 and 1/16/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,14 and 43-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,14 and 43-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 2, 4-13, 15-42 have been canceled. Amended claim 1 (2/11/04) and claims 3, 14, 43-50 are pending and under consideration by the Examiner. Contrary to discussions with Applicants attorney, upon further consideration it was determined that the 35 USC § 103 over claims 1, 3, 14, 43-50 would be maintained.

2. Receipt of Applicants arguments and amendments filed on 2/11/04 and 1/16/2004 are acknowledged.

3. The following previous rejections and objections are withdrawn in light of Applicants amendments filed on 2/11/04 and 1/16/2004:

(i) the objection to the title of the invention; and

(ii) the rejection of claims 1, 3, 14, 43-50 under 35 U.S.C. 1 12, second paragraph

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

5. Claims 1, 3, 14, 43-49 are rejected under 35 U.S.C. 103 as being unpatentable over Girasole et al in view of Kishimoto et al. (US Patent No. 5,888,510).

Girasole teach that osteoclastogenesis is promoted by IL-11 leading to loss of bone. (see abstract, lines 1-13). Girasole et al. discloses administering a neutralizing antibody to IL-11, as well as a monoclonal antibody to IL-11, to inhibit osteoclast formation in cocultures of marrow and calvaria cells (see abstract; see page 1518, lines 8-16; Table IV, page 1522). Girasole et al. Fail to disclose a method of administering to a patient neutralizing or monoclonal antibodies to the IL-11 protein for inhibiting reduction in bone density.

Kishimoto et al. teach a method for inhibiting synovial cell growth by administering to a patient polyclonal or monoclonal antibodies to IL-6 or IL-6 receptor (see claims 1-4) and also teach a method of treating chronic rheumatoid arthritis by administering to a patient polyclonal or monoclonal antibodies to the IL-6 receptor (see claims 1-11; Example 2, columns 13-14). Kishimoto also teaches that IL-6 antibody binds to IL-6 and inhibits the binding between IL-6 and the IL-6 receptor and thus blocks IL-6 signal transduction, inhibiting IL-6 biological activity (see column 3, lines 53-60). Therefore, Kishimoto discloses that if a cytokine causes a disease, an antibody to the cytokine will block the signal transduction by the cytokine, inhibit the cytokines biological activity and has an alleviating and therapeutic effect on the symptoms of the disease (see column 3, lines 41-52).

Therefore, it would have been prima facie obvious to one having ordinary skill in the art, from the method of Girasole (which teaches administering IL-11 antibodies to inhibit osteoclast development and subsequent bone loss), to administer IL-11 antibodies to patients as taught by Kishimoto et al., to obtain the known functions and advantages thereof as per the teachings of both Girasole and Kishimoto et al. Therefore, to substitute the IL-6 antibodies of Kishimoto et al., with another cytokine antibody like IL-11 antibody, said IL-11 antibody known to be involved in inhibiting osteoclast development as shown by the teachings of Girasole et al., would be obvious. One would have been motivated to administer IL-11 antibodies to a patient because Girasole et al teach the properties of IL-11 antibody that are intrinsic to the IL-11 antibody and Kishimoto et al provides the motivation to administer IL-11 antibodies to inhibit the biological activity of IL-11.

Applicants argue that Girasole merely describes an in vitro process of inhibiting osteoclast development by IL-11 antibody and never explicitly or impliedly teaches or suggests the use of IL-

11 antibody in vivo to treat patients with decreased bone density. However, contrary to Applicants arguments, if Girasole did explicitly or impliedly teach the use of IL-11 antibody in vivo to treat patients with decreased bone density, this rejection would be a 35 USC 102(b) rejection not a 35 USC 103 rejection. Furthermore, contrary to Applicants assertion, there is no unwarranted quantum leap from disclosing in vitro inhibitory effect on osteoclast development to in vivo patient treatment because Kishimoto provides the motivation to administer cytokine antibodies in a condition caused by the cytokine, to inhibit the biological activity of the cytokine involved in the condition. Therefore, from the teachings of Girasole and Kishimoto there is a definite nexus, which translates into a benefit for administering IL-11 antibodies for treating patients with decreased bone density.

6. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Girasole et al. (1994) in view of Kishimoto et al. (US Patent No. 5,888,510) as applied to claims 1, 3, 14, 43-49 above, and further in view in of Queen et al. (U.S. Patent No. 5,530,101).

The disclosure of Girasole et al and Kishimoto et al have been set forth above (see paragraph 5 above). However, Girasole et al and Kishimoto et al do not disclose a method of using humanized monoclonal antibodies to 1L-11 for inhibiting reduction of bone density in a patient.

Queen et al., (column 13, lines 5-65) teaches the humanization of monoclonal antibodies, as well as the issues involved in designing a humanized antibody that retains high affinity for its antigen. Queen et a1., (column 17, lines 31-43) further teaches the production of antibody fragments, including the Fab fragment.

Therefore, at the time the invention was made, it would have been prima facie obvious to a person of ordinary skill in the art to administer as taught by Queen et a1, humanized monoclonal antibodies to 1L- 11 for inhibiting reduction of bone density in a patient in a method as taught by Girasole in view of Kishimoto et al. The motivation for doing so would have been

the decreased immunogenicity of humanized antibodies when injected into humans, while the humanized antibodies retain their affinity for their epitope (Queen et al., (column 2, lines 5-8)).

Conclusion

No claim is allowed.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prema Mertz whose telephone number is (571) 272-0876. The examiner can normally be reached on Monday-Friday from 7:00AM to 3:30PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached on (571) 271-0871.

Official papers filed by fax should be directed to (703) 872-9306. Faxed draft or informal communications with the examiner should be directed to (571) 273-0876.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [yvonne.eyler@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark Office on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Prema Mertz

Prema Mertz Ph.D.
Primary Examiner
Art Unit 1646
March 1, 2004